

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application. Claim 1 has been cancelled without prejudice. Claim 21 has been amended herein. Claims 28-34 have been added herein.

LISTING OF CLAIMS

1-20. (Cancelled).

21. (Currently Amended) A method for detecting a fluorescent dye in a sample having an affinity to a fluorescent marker, said method comprising:

applying a sample to a carrier;

temporarily bringing the sample into contact with a fluorescent dye to thereby agglutinate the marker to the sample;

irradiating the sample on the carrier with an excitation light to excite fluorescence of the agglutinated marker;

emitting the excited fluorescence through a first aperture into a hollow space having a reflective interior surface; and

detecting the excited fluorescence utilizing a detector opposite a second aperture of the hollow space having the reflective interior surface[.];

wherein the first aperture is offset from the excitation light

22. (Previously Presented) A method in accordance with Claim 21 wherein irradiating the sample on the carrier further comprises reflecting monochromatic light

emitted by the radiation source at an excitation wavelength from a dichroic beam divider onto the source, and further wherein emitting the excited fluorescence through a first aperture further comprises transmitting the excited fluorescence at a different, fluorescence wavelength through the dichroic beam divider.

23. (Previously Presented) A method in accordance with Claim 22 wherein irradiating the sample further comprises scanning and focusing rays emitted by the radiation source over the carrier, said focusing utilizing an F/θ lens.

24. (Previously Presented) A method in accordance with Claim 23 wherein said emitting the excited fluorescence through a first aperture into a hollow space further comprises passing the excited fluorescence through a blocking filter in front of the first aperture that is opaque to the excitation light.

25. (Previously Presented) A method in accordance with Claim 23 wherein irradiating the sample further comprises scanning and focusing rays emitted by the radiation source over the carrier, said focusing utilizing an F/θ lens.

26. (Previously Presented) A method in accordance with Claim 21 wherein said emitting the excited fluorescence through a first aperture into a hollow space further comprises passing the excited fluorescence through a blocking filter in front of the first aperture that is opaque to the excitation light.

27. (Previously Presented) A method in accordance with Claim 21 wherein irradiating the sample further comprises scanning and focusing rays emitted by the radiation source over the carrier, said focusing utilizing an F/θ lens.

28. (New) A fluorescence detection system, the system comprising:
a sample, wherein the sample comprises a plurality of fluorescent dyes;
multiple radiation sources, wherein each radiation source is configured to transmit light to excite at least one fluorescent dye in the sample; and
at least one detector configured to detect fluorescent light from at least one fluorescent dye in the sample,
wherein the detection system does not have a lens system to collect fluorescent light from the plurality of dyes, and
wherein the detection system does not have a light guide to collect fluorescent light from the plurality of dyes.

29. (New) A system in accordance with Claim 28 further comprising:
a high-reflectance surface, wherein the surface is configured to collect the fluorescent light from the plurality of dyes.

30. (New) A system in accordance with Claim 29, wherein the surface has a light-tight arrangement with the detector.

31. (New) A system in accordance with Claim 28 further comprising:
multiple dichroic beam dividers, wherein a single dichroic beam divider
corresponds to a single radiation source.

32. (New) A system in accordance with Claim 28 further comprising:
a pinhole configured to fluorescence detection of a geometry of the sample.

33. (New) A system in accordance with Claim 28 further comprising a
radiation source of about 488 nm.

34. (New) A system in accordance with Claim 33 further comprising an
emission of fluorescent light of about 520 nm.

35. (New) A system in accordance with Claim 28 further comprising a
radiation source of about 633 nm.

36. (New) A system in accordance with Claim 35 further comprising an
emission of fluorescent light of about 670 nm.